

In the Claims:

Claim 1 (currently amended): A method for producing a nucleic acid molecule that comprises a continuous nucleotide sequence capable of being transcribed and translated to produce a protein of interest, the nucleic acid molecule derived from noncontiguous nucleotide sequences, comprising:

(a) amplifying at least two nucleotide sequences from a single nucleic acid molecule template using primer pairs to produce double-stranded amplified products, wherein the amplified nucleotide sequences reside noncontiguously in the nucleic acid molecule template, wherein each primer of a primer pair comprises an continuous uninterrupted recognition sequence for a class IIS restriction endonuclease which is located near the 5'-end of the primer and a portion of an amino acid coding sequence, such that cleavage of the amplified products with the class IIS restriction endonuclease yields at least two nucleic acid molecule fragments with cohesive ends that, when ligated to each other, produce a continuous nucleotide sequence capable of being transcribed and translated to produce a protein of interest,

(b) cleaving amplified products with the class IIS restriction endonuclease to produce nucleic acid molecule fragments, and

(c) ligating cleaved nucleic acid molecule fragments to produce a nucleic acid molecule comprising the continuous nucleotide sequence capable of being transcribed and translated to produce a protein of interest.

Claim 2 (previously presented): A method for producing a nucleic acid molecule that comprises a continuous nucleotide sequence capable of being transcribed and translated to produce a protein of interest, the nucleic acid molecule derived from noncontiguous nucleotide sequences, comprising:

(a) amplifying at least two nucleotide sequences from at least two nucleic acid molecule templates using primer pairs to produce double-stranded amplified products, wherein ~~each~~ at least one primer of a primer pair comprises an continuous uninterrupted recognition sequence for a class IIS restriction endonuclease which is located near the 5'-end of the primer and a portion of an amino acid coding sequence, such that cleavage of the amplified products with the class IIS restriction endonuclease yields at least two nucleic acid molecule fragments with cohesive ends that, when ligated to each other, produce a continuous nucleotide sequence capable of being transcribed and translated to produce a protein of interest,

(b) cleaving amplified products with the class IIS restriction endonuclease to produce nucleic acid molecule fragments, and

(c) ligating cleaved nucleic acid molecule fragments to produce a nucleic acid molecule comprising the continuous nucleotide sequence capable of being transcribed and translated to produce a protein of interest.

Claim 3 (currently amended): The method of claim 1, wherein the class IIS restriction endonuclease recognizes a five-base continuous uninterrupted recognition sequence.

Claim 4 (previously presented): The method of claim 3, wherein the class IIS restriction endonuclease is selected from the group consisting of *ActWI*, *Alw26I*, *AlwI*, *AsuHPI*, *BbvI*, *BcefI*, *BinI*, *BseGI*, *BseMII*, *BseXI*, *BspPI*, *BsmAI*, *Bst71I*, *BstF5I*, *FauI*, *FokI*, *HgaI*, *HphI*, *MboII*, *PleI*, *SfaNI*, and *TspRI*.

Claim 5 (currently amended): The method of claim 1, wherein the class IIS restriction endonuclease recognizes a six-base continuous uninterrupted recognition sequence.

Claim 6 (previously presented): The method of claim 5, wherein the class IIS restriction endonuclease is selected from the group consisting of *AceIII*, *BbsI*, *BbvII*, *Bce83I*, *BciVI*, *BfiI*, *BfuI*, *BmrI*, *BpiI*, *BpmI*, *BpuAI*, *BsaI*, *Bse3DI*, *BseRI*, *BsgI*, *BsmBI*, *BsmFI*, *BspMI*, *BsrDI*, *Bsu6I*, *Eam1104I*, *EarI*, *Eco31I*, *Eco57I*, *Esp3I*, *FauI*, *GsuI*, *Ksp632I*, *MmeI*, *RleAI*, *TaqII*, and *Tth111II*.

Claim 7 (currently amended): The method of claim 1, wherein the class IIS restriction endonuclease recognizes a seven-base continuous uninterrupted recognition sequence.

Claim 8 (previously presented): The method of claim 7, wherein the class IIS restriction endonuclease is *SapI*.

Claim 9 (previously presented): The method of claim 1, wherein the nucleic acid molecule template is selected from the group consisting of genomic DNA, cDNA, vector DNA, and a chemically-synthesized nucleic acid molecule.

Claim 10 (previously presented): The method of claim 2, wherein at least one nucleic acid molecule template is selected from the group consisting of genomic DNA, cDNA, vector DNA, and a chemically-synthesized nucleic acid molecule.

Claim 11 (previously presented): The method of claim 1, wherein each of the amplified products comprises at least a portion of an exon.

Claims 12-14 (cancelled).

Claim 15 (previously presented): The method of claim 1, wherein at least one of the amplified products comprises at least a portion of an exon, and at least one of the amplified products comprises a nucleotide sequence capable of controlling gene expression.

Claim 16 (previously presented): The method of claim 1, ~~wherein the continuous nucleotide sequence of interest encodes an amino acid sequence, and~~ wherein each of the amplified products comprises an exon.

Claim 17 (previously presented): The method of claim 16, wherein one primer of each primer pair is partially complementary to the antisense strand of the 5' end of an exon, and wherein the other primer of each primer pair is partially complementary to the sense strand of the 3'-end of the exon.

Claim 18 (previously presented): The method of claim 1, wherein at least one of the amplified products comprises at least one mutation of the nucleotide sequence, which resides in the corresponding nucleic acid molecule template.

Claim 19 (previously presented): The method of claim 18, wherein at least one mutation resides in an amino acid encoding sequence.

Claim 20 (previously presented): The method of claim 1, wherein the act of amplification is performed using a polymerase chain reaction.

Claim 21 (previously presented): A nucleic acid molecule obtained by the process of claim 1, wherein the nucleic acid molecule is produced by ligating 2 to 20 nucleic acid molecule fragments.

Claim 22 (previously presented): The nucleic acid molecule of claim 21, wherein the nucleic acid molecule is produced by ligating two nucleic acid molecule fragments.

Claim 23 (previously presented): A nucleic acid molecule obtained by the process of claim 1, wherein the nucleic acid molecule is produced by ligating greater than 20 nucleic acid molecule fragments.

Claim 24 (new): A nucleic acid molecule obtained by the process of claim 2, wherein the nucleic acid molecule is produced by ligating 2 to 20 nucleic acid molecule fragments.

Claim 25 (new): The nucleic acid molecule of claim 24, wherein the nucleic acid molecule is produced by ligating two nucleic acid molecule fragments.

Claim 26 (new): A nucleic acid molecule obtained by the process of claim 2, wherein the nucleic acid molecule is produced by ligating greater than 20 nucleic acid molecule fragments.